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GREAT LAKES BINATIONAL TOXICS STRATEGY

DRAFT 2002 PROGRESS REPORT

DECEMBER 4, 2002

DRAFT – DO NOT CITE OR QUOTE

DISCLAIMER

This draft report does not contain references for all dataset sources cited. References for all datasets will be included in the final report.

TABLE OF CONTENTS

Page

INTRODUCTION

In 2002, … ***[An Introduction will be included in the final report.]***

1.0 MERCURY

Canadian Workgroup co-chair: Robert Krauel
U.S. Workgroup co-chair: Alexis Cain

Progress Toward Challenge Goals

U.S. Challenge: Seek by 2006, a 50 percent reduction nationally in the deliberate use of mercury and a 50 percent reduction in the release of mercury from sources resulting from human activity.

Canadian Challenge: Seek by 2000, a 90 percent reduction in the release of mercury, or where warranted the use of mercury, from polluting sources resulting from human activity in the Great Lakes Basin.

U.S. mercury emissions decreased approximately 25 percent between 1990 and 1996, with significant additional reductions occurring through the present as the result of regulatory controls on emissions from incineration of medical and municipal wastes. Estimated mercury emissions have decreased more than 40 percent between 1990 and 2001 (see Figure 1-1), although updated official inventories are not available. By 2006, additional regulations and voluntary activities are expected to reduce mercury emissions a total of 50 percent or more, achieving the reduction challenge. For more information, see http://www.epa.gov/region5/air/mercury/progress.html.

While U.S. mercury use declined in the late 1990s, progress since 1997 is difficult to gauge quantitatively given changes in the sources of data about mercury consumption. Available data indicate that mercury use declined more than 50 percent between 1995 and 2001; much of this decrease is attributable to decreased mercury use by the chlor-alkali industry, which accounted for an estimated 35 percent of mercury use in 1995. Figure 1-2 provides two different estimates of projected U.S. mercury use for 2001, in comparison to the Strategy goal of a 50 percent reduction by 2006 (from a 1995 baseline). For a more detailed evaluation of data and assessment of progress, see http://www.epa.gov/region5/air/mercury/progress.html.

In Canada, mercury releases have been reduced by 78 percent from the 1988 baseline. Figure 1-3 illustrates the progress made toward the Canadian 90 percent reduction target. This figure shows that releases in Ontario have been cut by more than 11,000 kilograms since 1988, based on Environment Canada's 2000 mercury inventory.

Workgroup Activities and the 4-Step Process

The focus of the Mercury Workgroup has been on Steps 3 and 4: the examination and implementation of reduction options, and the development of partnerships and commitments. The following draft reports have been posted to the GLBTS web site: U.S. Sources and Regulations (Steps 1 and 2) (http://www.epa.gov/glpno/bns/mercury/stephg.html), and Mercury Reduction Options (Step 3) (http://www.epa.gov/glnpo/bns/mercury/Draft_Report_for_Mercury_Reduction_Options.pdf).

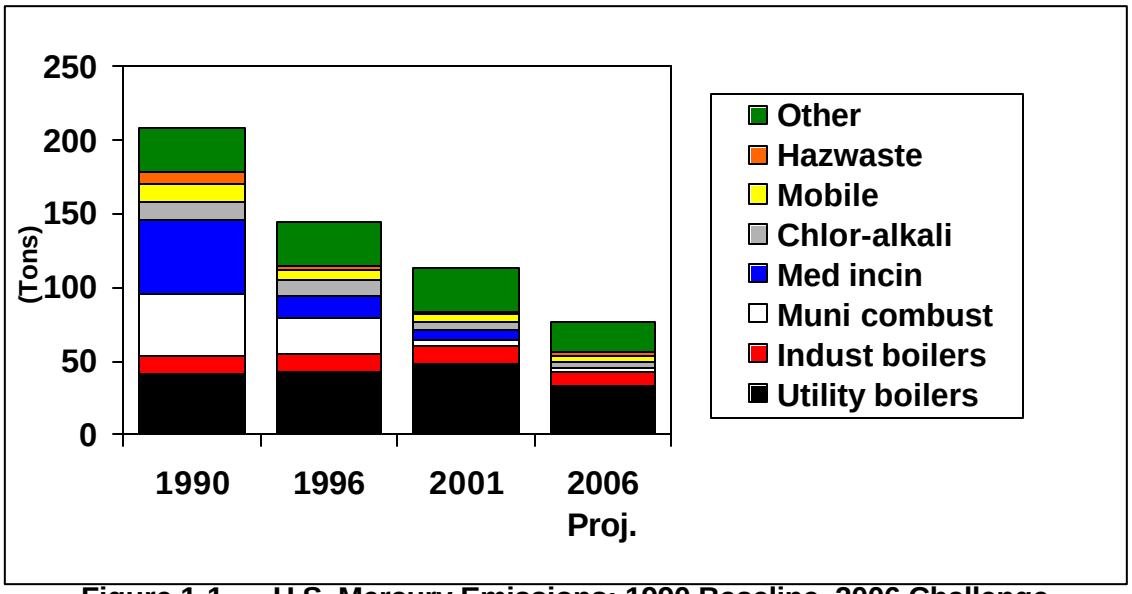

Figure 1-1. U.S. Mercury Emissions: 1990 Baseline, 2006 Challenge

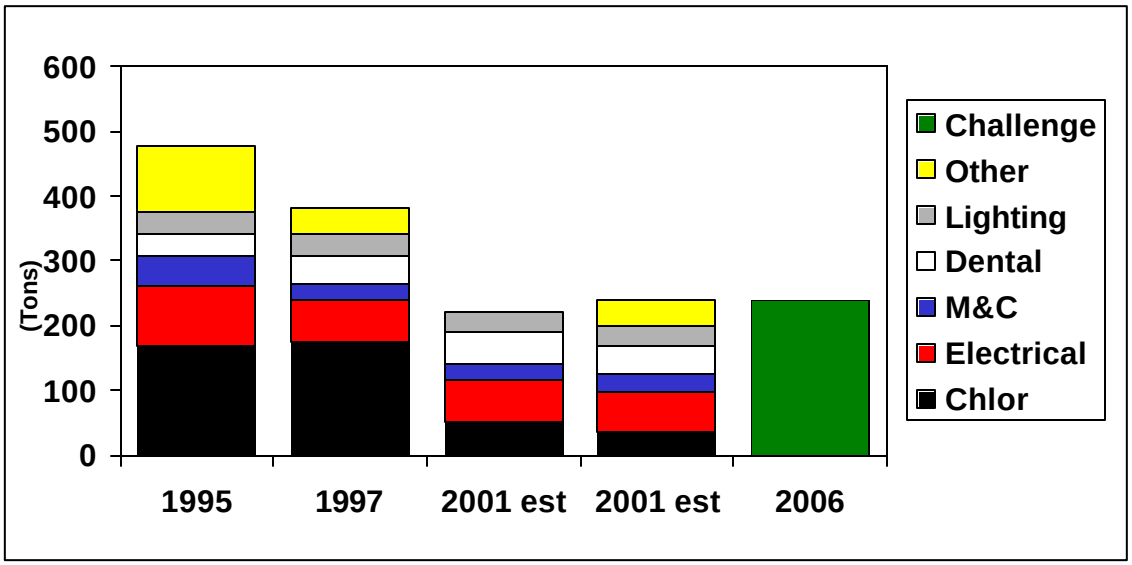

Figure 1-2. U.S. Mercury Use: 1995 Baseline, 2006 Challenge

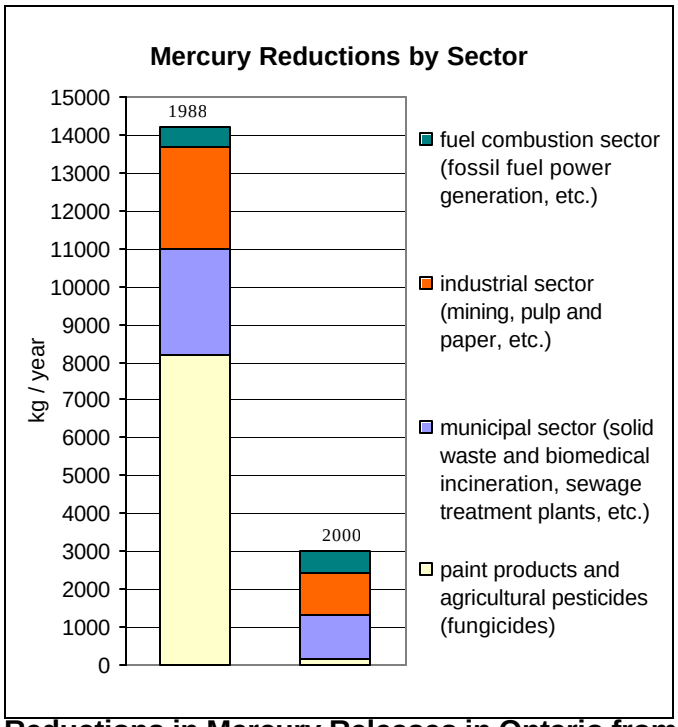

Figure 1-3. Reductions in Mercury Releases in Ontario from 1988 to 2000, by Sector

Reduction Activities

Numerous mercury reduction activities are occurring in Canada to meet the goal of reducing releases of mercury in the Great Lakes Basin, and in the U.S. to meet the goal of reducing the deliberate use of mercury and releases of mercury nationwide. The following is a selection of activities reported by Mercury Workgroup participants. Links to web sites with additional details about many of these activities can be found at http://www.epa.gov/Region5/air/mercury/mercury.html.

Chlorine Industry Voluntary Mercury Reduction Commitment: The Chlorine Institute released its *Fifth Annual Report to EPA*, showing a 75 percent capacity-adjusted reduction in mercury use by the U.S. chlor-alkali industry between 1995 and 2001, more than meeting this sector's commitment to reduce mercury use 50 percent by 2005. Including shutdowns of mercury cell factories, mercury use has decreased 81 percent. The Institute's Mercury Issues Management Steering Committee continues to work to promote mercury reduction at chlor-alkali facilities.

Hospitals for a Healthy Environment: The Hospitals for a Healthy Environment (H2E) program has 335 partners representing 1019 facilities: 347 hospitals, 618 clinics, 22 nursing homes and 32 other types of facilities. These partners are health care facilities that have pledged to eliminate mercury and reduce waste, consistent with the overall goals of H2E. Region 5 hosted a H2E Conference for hospital representatives and Technical Assistance Providers, focusing on waste reduction tools available through the H2E program and compliance assistance

information from US EPA, Illinois EPA, and the Metropolitan Reclamation District of Greater Chicago.

Healthcare EnviroNet: The Canadian Centre for Pollution Prevention, with support from Environment Canada, Health Canada, and the Canadian Coalition for Green Health Care, maintains online pollution prevention information to assist health care professionals at www.c2p2online.com.

Canadian Coalition for Green Health Care: The Coalition and the Ontario Hospital Association (OHA) organized seminars on environmental programs, products, and services during the OHA annual convention held November 18 to 20, 2002. The program included an exhibit area (the "Green Lane"). The Coalition also assisted in the organization of several mercury thermometer take-back events at affiliated hospitals.

Ontario Ministry of the Environment: Currently, 44 Ontario hospitals incinerate approximately 1,400 tonnes of biomedical waste and 700 tonnes of municipal solid waste each year. The majority of the hospital incinerators currently in operation are over 20 years old and not designed to handle the composition of biomedical waste currently generated. In December 2001 the Ministry announced that these existing hospital incinerators will be phased out within one year of the proposed regulation taking effect. The regulation has recently come into effect.

In Ontario, there are three waste management firms that operate incineration and non-incineration technologies (autoclave and hydroclave technologies). These facilities have the capacity to manage the increased waste volumes when the existing hospital incinerators close.

EcoSuperior: EcoSuperior has partnered with the Clean Air Foundation to develop the Merc Switch Out program along the north shore of Lake Superior. The program works with automotive recyclers to collect mercury switches from retired vehicles. EcoSuperior's collection programs for button batteries, thermostats, and fluorescent lamps are also continuing.

City of Toronto: Preliminary data indicate that the city's dental waste control efforts are having a positive effect. Although it is too early to say with confidence, mercury loadings to Toronto sewage treatment plants appear to have been reduced by 40 to 68 percent between 2001 and 2002.

Dental Waste Management Working Group: The Dental Waste Management working group is developing a Best Management Practices (BMP) training tool to help train new and practicing dentists, dental hygienists, and assistants on environmentally sensitive management of hazardous dental wastes, including waste dental amalgam. The members of the working group are Ontario Dental Association, Ontario Dental Hygienist Association, Ontario Dental Nurses & Assistants Association, Ontario Ministry of the Environment, City of Toronto, George Brown College, Durham College, University of Toronto, University of Western Ontario, Royal College of Dental Surgeons of Ontario, College of Dental Hygienists of Ontario, and Environment Canada.

Association of Municipal Recycling Coordinators: The Association of Municipal Recycling Coordinators (AMRC) and the Regional Municipality of Niagara recently completed a nine-

month pilot project on behalf of Environment Canada. Mercury-containing switches and sensors were removed from discarded appliances that had been segregated by the Region at two of its waste handling facilities. The results of the pilot project and the subsequent instruction manual and video have been distributed to municipalities in order to help them set up similar mercury removal programs.

Regional Municipality of Niagara: The Regional Municipality of Niagara is developing a Mercury Elimination Policy and Plan that could be used as a template for use by other upper-tier Canadian municipalities (regions, districts, and counties) in their own operations. The project comprises a number of steps:

Step 1: Regional Council endorses a comprehensive review of its operations for opportunities to reduce/eliminate mercury.
Step 2: Activities and programs in regional departments will be assessed for current mercury management initiatives. This includes equipment purchasing, handling and disposal practices, quantification of mercury inputs/outputs, and an audit of mercury equipment and devices on hand.
Step 3: Mercury pollution prevention plans for each department will be developed and reviewed. Where appropriate, outreach to non-regional facilities that contribute to mercury loadings, such as industries, hospitals, marinas, and schools will be undertaken.
Step 4: Regional Council will be asked to review and finalize a mercury reduction/elimination policy statement, and to endorse the reduction/elimination plans developed for each department.

Merc Switch Out Program: In June 2001, Pollution Probe initiated a switch out program to recover mercury switches from end-of-life vehicles. With funding from Ontario Power Generation, the Ontario Ministry of the Environment, and Environment Canada, and in partnership with the Ontario Automotive Recycling Association, the program began with 11 participating auto dismantlers across Ontario. The program has grown to include over 100 participating dismantlers. The program is currently being lead by the Clean Air Foundation.

See Section 6.0 for additional information on recent stakeholder activities.

Monitoring

The IJC's *10th Biennial Report on Great Lakes Water Quality* recommended that mercury be added to the list of substances measured in the Integrated Atmospheric Deposition Network (IADN). As well, mercury had been cited since the inception of IADN as a key atmospheric constituent that should be monitored as soon as methods were available. In 2001, equipment was purchased and installed at the two IADN Canadian Master stations (Point Petre and Burnt Island) to measure gaseous and particulate mercury, as well as mercury in precipitation. The protocols employed are consistent with those of the Canadian (CAMNet) and U.S. (MDN) mercury deposition networks. These data will be used by the IADN Steering Committee to calculate updated mercury loading estimates for the Great Lakes.

Next Steps

The Workgroup will continue to focus on information-sharing about cost-effective reduction opportunities, tracking of progress toward meeting reduction goals, and publicizing voluntary achievements in mercury reduction. Particular attention will be paid to information-sharing in areas where mercury releases are significant but there are no federal regulations existing or regulations are under development. For instance, the Workgroup will attempt to focus attention on the contamination of metal scrap by mercury-containing devices, and the resulting emissions, and provide a forum for discussion of cost-effective approaches to addressing this problem. In addition, the Workgroup will focus on the issue of mercury releases from dental offices and will help state and local governments identify cost-effective reduction approaches for this sector. A Mercury Workgroup meeting on December 2 will focus on this issue and will lead to the production of a report on dental sector mercury reduction options for state and local governments.